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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/632,143	07/31/2003	Cheng Feng Liu	48558.0.1.1	1827
7590	11/03/2004		EXAMINER NEGRON, ISMAEL	
Eric J. Snustad 4000 Pillsbury Center 200 South Sixth Street Minneapolis, MN 55402-1425			ART UNIT 2875	PAPER NUMBER

DATE MAILED: 11/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/632,143

**Applicant(s)**

LIU, CHENG FENG

**Examiner**

Ismael Negron

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 09 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 19 and 20 is/are allowed.
- 6) ☒ Claim(s) 1,4-6 and 11-17 is/are rejected.
- 7) ☒ Claim(s) 2,3,7-10 and 18 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 January 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All - b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 20040120.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Title*

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: **Battery-Powered Illuminated Ice Cube.**

### *Abstract*

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

The abstract should not refer to purported merits or speculative applications of the invention and should not compare the invention with the prior art.

2. The abstract of the disclosure is objected to because it repeats information given in the title, uses phrases that can be implied, and refers to purported merits or speculative applications of the invention. Correction is required. See MPEP § 608.01(b).

### ***Drawings***

3. Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated (as admitted in page 1, lines 11 and 12). See MPEP § 608.02(g).

4. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "23" has been used to designate both "*light housing*" (page 3, line 13), "*light cylinder*" (page 3, line 15) and "*upper light cylinder*" (page 3, line 17).

5. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "1" has been used to designate different parts in different embodiments. See page 1 (line 12) and page 3 (line 11). Also, note, in pages 1 and 3, reference numbers "2" (line 12) and "3" (line 12).

6. The applicant is advised that the reference characters must be properly applied, with no single reference character being used for two different parts or for a given part and a modification of such part. See MPEP §608.01(g). Correction is required.

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7. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: " 1' ". Also, note reference numbers " 2' " and " 3' " in the same figure.
8. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: "K" (page 1, line 14).
9. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Specification***

10. The use of the trademark PERSPEX (Reg. No. 555324 to Imperial Chemical Industries, Ltd. of London, England, February 26, 1952) has been noted in this application. It should be capitalized wherever it appears (e.g. page 4, line 3) and be accompanied by the generic terminology (e.g. synthetic resins).

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Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

11. The disclosure is objected to because of the following informalities: the phrase “(1) *polymethyl methacrylate, lexiglass, or acrylic*” (page 4, line 19) seems to be out of place.

Appropriate correction is required.

### ***Claim Objections***

12. Claim 8 is objected to because of the following informalities: there is insufficient antecedent basis for the limitation “*the locking teeth*” in line 1. Appropriate correction is required.

The Examiner suggests amending Claim 8 to depend on Claim 7 (instead of Claim 4, as filed).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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13. Claims 1, 4-6, and 11-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admission of Prior Art (AAPA) and VANDERSCHUIT (U.S. Pat. 6,416,198).

AAPA discloses an illuminated ice cube having:

- **an outer casing (as recited in claims 1, 4 and 15), Figure 1, reference number 1';**
- **the outer casing having a natural ice cube shape (as recited in claims 1, 4 and 15), page 1, line 12;**
- **the outer casing having ripple-shaped sides (as recited in Claim 1), page 1, line 12;**
- **an inner unit (as recited in claims 1, 4 and 15), Figure 1, reference number 2';**
- **the inner unit being positioned within the casing (as recited in Claim 1), page 1, lines 12 and 13;**
- **the inner unit having a chamber (as recited in claims 1, 11 and 15), inherent;**
- **a light source (as recited in claims 1, 4 and 15), page 1, line 13;**
- **the light source being an LED (as recited in Claim 1), page 1, line 13;**
- **the light source being positioned within the chamber (as recited in claims 1, 4, 11 and 15), page 1, line 13;**
- **a circuit board (as recited in Claim 1), page 1, line 14;**

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- **the circuit board being positioned within the chamber (as recited in Claim 1), page 1, lines 13 and 14;**
- **a battery (as recited in claims 1, 4 and 15), page 1, line 13;**
- **the battery being positioned within the chamber (as recited in claims 1 and 15), page 1, lines 13 and 14;**
- **a switch (as recited in claims 1 and 4), page 1, line 14;**
- **a battery cover lid (as recited in Claim 1), Figure 1, reference number 3';**
- **a hole for receiving the cover lid (as recited in claims 1 and 4), inherent;**
- **the casing including a bottom lid (as recited in claims 4 and 15), Figure 1, reference number 3';**
- **the bottom lid defining an opening (as recited in Claim 4), as seen in Figure 1; and**
- **the opening being adapted to received the battery cover (as recited in Claim 5), as evidenced by Figure 1.**

AAPA discloses all the limitations of the claims, except:

- the inner unit including a base (as recited in Claim 1);
- the inner unit including a raised support (as recited in Claim 1);
- the inner unit including a light cylinder (as recited in Claim 1);
- the raised support being positioned on the base (as recited in Claim 1);



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- the cylinder being position on the raised support (as recited in Claim 1);
- the cylinder creating the chamber (as recited in Claim 1);
- the chamber running through the base, raised support and the cylinder;
- the switch being a push-button switch (as recited in Claim 1);
- the opening defined by the bottom lid receiving the battery cover (as recited in Claim 5);
- the opening being located in the center of the lid (as recited in Claim 6);
- the switch being located space-apart from the opening (as recited in Claim 6);
- the inner housing being faceted (as recited in Claim 12);
- the cylinder being faceted (as recited in claims 13, 15 and 16); and
- the inner housing being rhombus cylinder (as recited in claims 14 and 17).

VANDERSCHUIT discloses an illuminated ice cube having:

- **an outer casing (as recited in claims 1, 4 and 15), Figure 2, reference number 11;**
- **the outer casing having a natural ice cube shape (as recited in claims 1, 4 and 15), as seen in Figure 2;**

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- **the outer casing having ripple-shaped sides (as recited in Claim 1), as seen in Figure 2;**
- **an inner unit (as recited in claims 1, 4 and 15), Figure 2, reference number 12;**
- **the inner unit being positioned within the casing (as recited in Claim 1), column 3, lines 3 and 4;**
- **the inner unit including a base (as recited in Claim 1), as seen in Figure 2;**
- **the inner unit including a raised support (as recited in Claim 1), Figure 2, reference number 21;**
- **the inner unit including a light cylinder (as recited in Claim 1), Figure 2, reference number 25;**
- **the raised support being positioned on the base (as recited in Claim 1), as seen in Figure 2;**
- **the cylinder being position on the raised support (as recited in Claim 1), as seen in Figure 2;**
- **the cylinder creating the chamber (as recited in Claim 1), column 3, line 22;**
- **the chamber running through the base, raised support and the cylinder, as seen in Figure 1;**
- **the inner unit having a chamber (as recited in claims 1, 11 and 15), as seen in Figure 1;**

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- **a light source (as recited in claims 1, 4 and 15), Figure 2,**  
reference number 35;
- **the light source being an LED (as recited in Claim 1), column 3,**  
lines 29 and 30;
- **the light source being positioned within the chamber (as**  
**recited in claims 1, 4, 11 and 15), column 5, line 48;**
- **a battery (as recited in claims 1, 4 and 15), Figure 2, reference**  
number 41;
- **the battery being positioned within the chamber (as recited in**  
**claims 1 and 15), as seen in Figure 1;**
- **a switch (as recited in claims 1 and 4), Figure 6, reference**  
number 63;
- **the switch being a push-button switch (as recited in Claim 1),**  
column 6, lines 50 and 51;
- **a battery cover lid (as recited in Claim 1), Figure 2, reference**  
number 14;
- **a hole for receiving the cover lid (as recited in claims 1 and 4),**  
as seen in Figure 1;
- **the casing including a bottom lid (as recited in claims 4 and**  
**15), Figure 2, reference number 14;**
- **the bottom lid defining an opening (as recited in Claim 4), as**  
seen in Figure 1;

- **the opening being adapted to received the battery cover (as recited in Claim 5), as evidenced by Figure 1;**
- **the opening defined by the bottom lid receiving the battery cover (as recited in Claim 5), as seen in Figure 2;**
- **the opening being located in the center of the lid (as recited in Claim 6), as seen in Figure 2; and**
- **the switch being located space-apart from the opening (as recited in Claim 6), as seen in Figure 6.**

It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to combine the teachings of AAPA and VANDERSCHUIT to obtain an IC-controlled illuminated ice cube capable of emitting multi-color light, and with means to remove the battery for replacement, as per the teachings of both AAPA and VANDERSCHUIT.

Regarding the light cylinder being faceted (as recited in claims 12-17), it would have been obvious to one of ordinary skill in the art at the time the invention was made to use such faceted cylinder, since the courts have stated that matters relating to ornamentation only which have no mechanical function cannot be relied upon to patentably distinguish the claimed invention from the prior art. *In re Seid*, 161 F.2d 229, 73 USPQ 431 (CCPA 1947). In this case, by applicant's own admission (see page 3, lines 13-15), the shape of the light cylinder is a feature of certain embodiments (not a defining feature of the claimed invention) to give the device a desired appearance (emphasis added).

***Relevant Prior Art***

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

**Roberts, Sr.** (U.S. Pat. 5,070,437), **Cheng** (U.S. Pat. 5,860,724), **Rodgers** (U.S. Pat. 5,903,212) and **McKinney** (U.S. Pat. 6,669,352) disclose devices for providing illumination of liquids, such devices being shaped to simulate ice cubes.

**Kahl** (U.S. Pat. 3,818,208) and **Tai** (U.S. Pat. 3,793,362) disclose illuminated beverage container for providing illumination of the contained liquid.

***Allowable Subject Matter***

15. Claims 19 and 20 are allowed.

16. Claims 2, 3, 7-10 and 18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

17. The following is a statement of reasons for the indication of allowable subject matter:

Applicant discloses an ice cube-shaped illumination device including an LED, a circuit board, a battery and a push-button switch for turning the device ON and OFF. The device also includes a bottom lid for closing a housing opening, such lid including symmetrically place locking teeth to engage matching teeth formed on the opening of

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the housing. In one embodiment, the push-button switch is positioned off-set of the housing opening.

No prior art was found teaching individually, or suggesting in combination, all of the features of the applicants' invention, specifically claimed teeth structure for securing the bottom lid to the housing, or the push-button switch being located in a position off-set of the opening.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ismael Negron whose telephone number is (571) 272-2376. The examiner can normally be reached on Monday-Friday from 9:00 A.M. to 6:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra L. O'Shea, can be reached on (571) 272-2378. The facsimile machine number for the Art Group is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications maybe obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, go to <http://pair-direct.uspto.gov>. Should you

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have questions on access to Private PAIR system, contact the Electronic Business Center (EBC) toll-free at 866-217-9197.

  
Inr

October 26, 2004



**JOHN ANTHONY WARD  
PRIMARY EXAMINER**